

## What Is Claimed Is:

1. A method of radio environment reporting in a remote unit that does not have dedicated traffic channel resources assigned, the method comprising:

5 receiving a first message to perform radio environment reporting on a reverse common signaling channel;

initializing a pilot list;

storing the pilot list;

10 determining whether the remote unit must send radio environment information;

when the remote unit must send radio environment information,

updating the pilot list; and

transmitting the radio environment information to infrastructure equipment.

15 2. The method of claim 1 wherein receiving a first message comprises receiving a parameter that controls a duration of radio environment reporting.

3. The method of claim 2 wherein receiving a parameter comprises  
20 receiving a timer value that sets a limit on the amount of time the remote unit is in a mode of providing radio environment information to the infrastructure equipment.

4. The method of claim 2 wherein receiving a parameter comprises  
25 receiving a limit on a number of second messages that the remote unit transmits to the infrastructure equipment.

5. The method of claim 1 wherein initializing a pilot list comprises  
30 initializing a pilot list to a last Active Set on a Traffic Channel just before a dedicated RF connection between the remote unit and the infrastructure equipment is released.

6. The method of claim 1 wherein initializing a pilot list comprises initializing a pilot list to a current Active Set, wherein the current Active Set is an Active Set on a Traffic Channel at a moment the remote unit receives the first message.

7. The method of claim 1 wherein determining whether the remote unit must send radio environment information comprises:

determining whether the remote unit performed an idle handoff to a pilot that is not in the pilot list; and

when the remote unit performed an idle handoff to a pilot that is not in the pilot list, determining that the remote unit must send radio environment information.

8. The method of claim 3 wherein after receiving the first message, the method starts a timer and wherein, when the timer expires, the method discontinues radio environment reporting.

9. The method of claim 4 wherein after receiving the first message, the method initializes a second message counter to zero, increments the value of the second message counter when a second message is sent or received, and wherein, when a value of the second message counter is equal to the limit on second messages, the method discontinues radio environment reporting.

10. The method of claim 1 wherein when the remote unit does not need to send radio environment information, the method comprises determining whether an event has occurred to place the remote unit on a traffic channel; and when an event has occurred, discontinuing radio environment reporting.

11. A method of radio environment reporting in infrastructure equipment comprising:

transmitting a first message to a remote unit, the first message  
5 instructing the remote unit to perform radio environment reporting on a  
reverse common signaling channel;  
initializing a pilot list;  
determining whether a second message has been received; and  
when a second message has been received, storing radio environment  
10 information contained in the second message.

12. The method of claim 11 further comprising:

determining a location of the remote unit using the stored radio  
environment information; and

15 sending a traffic channel assignment to the remote unit.

13. The method of claim 11 wherein transmitting a first message  
comprises transmitting a parameter that controls a duration of radio  
environment reporting.

14. The method of claim 13 wherein transmitting a parameter comprises  
transmitting a timer value that sets a limit on the amount of time the remote  
unit is in a mode of providing radio environment information to the  
infrastructure equipment.

15. The method of claim 13 wherein transmitting a parameter comprises  
transmitting a limit on a number of second messages that the remote unit  
transmits to the infrastructure equipment.

16. The method of claim 11 wherein initializing a pilot list comprises  
initializing a pilot list to a last Active Set on a Traffic Channel just before a  
dedicated RF connection between the remote unit and the infrastructure  
equipment is released.

17. The method of claim 11 wherein initializing a pilot list comprises initializing a pilot list to a current Active Set, wherein the current Active Set is an Active Set on a Traffic Channel at a moment the remote unit receives the first message.

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18. A storage medium having stored thereon a set of instructions which, when loaded into a processor of a remote unit, causes the unit to:

- 5 receive a first message to perform radio environment reporting on a reverse common signaling channel;
- initialize a pilot list;
- store the pilot list;
- determine whether the remote unit must send radio environment information;
- 10 when the remote unit must send radio environment information, update the pilot list; and
- transmit the radio environment information to infrastructure equipment.

19. A storage medium having stored thereon a set of instructions which, when loaded into a processor of an infrastructure equipment, causes the equipment to:

5           transmit a first message to a remote unit, the first message instructing the remote unit to perform radio environment reporting on a reverse common signaling channel;

          initialize a pilot list;

          determine whether a second message has been received; and

10           when a second message has been received, store radio environment information contained in the second message.